CLAIMS

1. An information processing apparatus comprising a plurality of operating systems (OS's), the plurality of OS's including a control OS controlling communications between the plurality of OS's, the control OS controlling message transfer between logical partitions set up for respective communication executing OS's, by switching a message area in a physical address space from a mapping state to a message area in a logical partition address space in a message transmitting OS to a mapping state to a message area in a logical partition address space in a message receiving OS.

2. The information processing apparatus according to claim 1, wherein at least one of the communication executing OS's in communication operation generates a socket associated with a file descriptor identified by a file system managed by own OS, generates a virtual file accessed via the socket, and accesses the message area in the physical address space via the virtual file.

3. The information processing apparatus according to claim 2, wherein the communication executing OS in communication operation using the socket acquires an identifier of the virtual file associated with the socket,

and performs one of a message write operation and a message read operation using the virtual file identified by the acquired virtual file identifier.

4. The information processing apparatus according to claim 1, wherein at least one of the communication executing OS's in communication operation generates a socket associated with a file descriptor identified by a file system managed by own OS, and maps the message area in the physical address space to an address space of a process via the socket so that the process directly accesses the message area.

5. The information processing apparatus according to claim 1, wherein at least one of the communication executing OS's in communication operation generates a socket associated with a file descriptor identified by a file system managed by own OS, and maps the message area in the physical address space to an address space of a logical partition corresponding to the communication executing OS via the socket in order to access the message area.

6. The information processing apparatus according to one of claims 2 through 5, wherein the communication executing OS in communication operation using the socket

sets an identifier of service corresponding to the socket, and sets communication permission corresponding to the service.

7. The information processing apparatus according to one of claims 2 through 5, wherein the communication executing OS in communication operation using the socket performs a reception monitoring process on a message via the socket.

8. The information processing apparatus according to claim 7, wherein the communication executing OS performs the reception monitoring process on the message via the socket by applying a select system call.

9. A communication processing method of an information processing apparatus storing a plurality of operating systems (OS's), comprising:

a step of setting a message area in a physical address space to a mapping state to map to a message area in a logical partition address space of a message transmitting OS, and

a step of releasing the mapping state and setting the message area in the physical address space to a mapping state to map to a message area in a logical partition

address space of a message receiving OS.

10. The communication processing method according to claim 9, wherein at least one of the communication executing OS's performing message transfer generates a socket associated with a file descriptor identified by a file system managed by own OS, generates a virtual file accessed via the socket, and accesses the message area in the physical address space via the virtual file in order to perform message transfer.

11. The communication processing method according to claim 10, wherein the communication executing OS in communication operation using the socket acquires an identifier of the virtual file associated with the socket, and performs one of a message write operation and a message read operation using the virtual file identified by the acquired virtual file identifier.

12. The communication processing method according to claim 9, wherein at least one of the communication executing OS's in communication operation generates a socket associated with a file descriptor identified by a file system managed by own OS, and maps the message area in the physical address space to an address space of a process via

the socket so that the process directly accesses the message area.

13. The communication processing method according to claim 9, wherein at least one of the communication executing OS's in communication operation generates a socket associated with a file descriptor identified by a file system managed by own OS, and maps the message area in the physical address space to an address space of a logical partition corresponding to the communication executing OS via the socket in order to access the message area.

14. The communication processing method according to one of claims 9 through 13, wherein the communication executing OS in communication operation using the socket sets an identifier of service corresponding to the socket, and sets communication permission corresponding to the service.

15. The communication processing method according to one of claims 9 through 13, wherein the communication executing OS in communication operation using the socket performs a reception monitoring process on a message via the socket.

16. The communication processing method according to claim 15, wherein the communication executing OS performs the reception monitoring process on the message via the socket by applying a select system call.

17. A computer program for controlling communications in an information processing apparatus storing a plurality of operating systems (OS's), comprising:

a step of setting a message area in a physical address space to a mapping state to map to a message area in a logical partition address space of a message transmitting OS, and

a step of releasing the mapping state and setting the message area in the physical address space to map to a message area in a logical partition address space of a message receiving OS.

18. A computer program for controlling communications in an information processing apparatus storing a plurality of operating systems (OS's), comprising:

a step of generating a socket associated with a file descriptor identified by a file system managed by own OS,

a step of generating a virtual file accessed via the socket, and

a step of accessing the message area in the physical

address space via the virtual file in order to perform message transfer.

19. A computer program for controlling communications in an information processing apparatus storing a plurality of operating systems (OS's), comprising:

a step of generating a socket associated with a file descriptor identified by a file system managed by own OS,

a step of mapping the message area in the physical address space to an address space of a process via the socket, and

a step of accessing directly the message area.